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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/954,508

09/14/2001

Ivan A. Todorov

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11/01/2005

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EXAMINER

NGUYEN, THANH T

ART UNIT

PAPER NUMBER

2144

DATE MAILED: 11/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/954,508

Applicant(s)

TODOROV ET AL.

Examiner

Tammy T. Nguyen

Art Unit

2144

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE ____ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on September 14, 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-50 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-50 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.



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Detailed Office Action

1. This action is in response to the application 09/954,508 filed. **September 14, 2001**
2. Claims 1-50 are presented for reexamination.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dorrance et al., (hereinafter Dorrance) U.S. Patent No. 6,430,598 in view of Lim et al., (hereinafter Lim) U.S. Patent No. 6,718,550.
 1. As to claim 1, Dorrance teaches the invention as claimed, including a process data access server enabling client applications incorporating potentially multiple differing data exchange protocols to access process data stored at potentially many different locations in a process control system, the process data access server comprising: a device protocol interface facilitating accessing process data storage locations within the process control system (fig.2, 12 connect with data storage system 44); data

exchange protocol modules enabling client applications to request access to process data storage locations via the process data access server according to particular client data exchange protocols supported by the set of client data exchange protocol modules (Fig.3, protocol converter 65) (see col.6, lines 7-25); and a data access server engine (fig.3, server 62) for executing process data access requests, received by the process data access server via the set of client data exchange protocol modules (Fig.3 converter 65), by accessing, via the device protocol interface, data storage locations (Fig.3 message store 66) corresponding to the process data access requests, and wherein the data access server engine includes a client application data exchange protocol (Fig.3 server 62 and protocol converter 65) abstraction layer comprising a set of operations callable by ones of data exchange protocol modules in response to receipt by the client data exchange protocol modules of process data access requests (see col.5, lines 35-55, and col.6, lines 7-54). But Dorrance does not explicitly teach a set of client. However, Lime teaches a set of client (see col.2, lines 43-51, and col.23, lines 20-40). It would have been obvious to one of ordinary skill in the art at the time of the invention was made to implement the teachings of Lim into the computer system of Dorrance to have a set of client because it would have provided specific functions that can improve and reduce the performance of object in distributed object system.

5. As to claim 2, Dorrance teaches the invention as claimed, wherein the set of client data exchange protocol modules comprise plug ins (see fig.3).

2. As to claim 3, Dorrance does not teach a set of client at least one of the data exchange protocol plug ins comprises a dynamic plug in. However, Lime teaches a set of client (see col.2, lines 43-51, and col.23, lines 20-40). It would have been obvious to one of ordinary skill in the art at the time of the invention was made to implement the teachings of Lim into the computer system of Dorrance to have a set of client because it would have provided specific functions that can improve and reduce the performance of object in distributed object system.
3. As to claim 4, Dorrance does not teach the invention as claimed, wherein at least one of the data exchange protocol (see col. 6, lines 15-25) plug ins comprises a static plug in. However, Lime teaches a set of client (see col.2, lines 43-51, and col.23, lines 20-40). It would have been obvious to one of ordinary skill in the art at the time of the invention was made to implement the teachings of Lim into the computer system of Dorrance to have a set of client because it would have provided specific functions that can improve and reduce the performance of object in distributed object system.
6. As to claim 5, Dorrance teaches the invention as claimed, wherein the set of protocol conversion modules comprise both static and dynamic plug ins (see Fig.3, Protocol converter 65).
4. As to claim 6, Dorrance teaches the invention as claimed, wherein ones of the data exchange protocol modules handle data access requests from client applications in accordance with particular client data exchange protocols (see col.6, lines 15-39).
But Dorrance does not explicitly teach a set of client. However, Lime teaches a set of

client (see col.2, lines 43-51, and col.23, lines 20-40). It would have been obvious to one of ordinary skill in the art at the time of the invention was made to implement the teachings of Lim into the computer system of Dorrance to have a set of client because it would have provided specific functions that can improve and reduce the performance of object in distributed object system.

7. As to claim 7, Dorrance teaches the invention as claimed, further including: a loading mechanism for determining a presence of at least one of the set of client data exchange protocol modules upon a machine for executing the process data access server, and loading the at least one client data exchange protocol module during a startup process that integrates the at least one client data exchange module with the data access server engine (fig.3).
8. As to claim 8, Dorrance teaches the invention as claimed, wherein the set of operations of the data access server engine includes at least one operation callable by at least two distinct ones of the set of client data exchange protocol modules that incorporate distinct data exchange protocols (fig.3, protocol converter 65).
9. As to claim 9, Dorrance teaches the invention as claimed, wherein an operational data access server including the device protocol interface, the set of client data exchange protocol modules, and the data access server is created by a start-up process that builds the operational data access server from previously installed program files, and wherein the program files of the client data exchange protocol modules and the data access server are independently designateable with regard of one another (fig.3, see col.6, lines 15-39).

10. As to claim 10, Dorrance teaches the invention as claimed, wherein the set of interface operations executable by the data access server engine includes an asynchronous data read operation for providing data from an identified data source in response to a client application data request (see 7, lines 24-54).
11. As to claim 11, Dorrance teaches the invention as claimed, wherein the set of interface operations executable by the data access server engine includes a synchronous read operation that, in accordance with a timer duration expiration event, updates identified process data values via the device protocol interface (see col.42-55).
12. As to claim 12, Dorrance teaches the invention as claimed, wherein the synchronous read operation discards an updated process data value for a data item that is determined to be unchanged from a current stored value for the data item, thereby avoiding transmissions of unchanged data values between the process data access server and requesting client applications (Fig.3, server 62).
13. As to claim 13, Dorrance teaches the invention as claimed, wherein the set of interface operations executable by the data access server engine includes a group creation operation that creates a first logical group containing a first set of data items (see col. 8, lines 1-22).
5. As to claim 14, Dorrance teaches the invention as claimed, wherein a second logical group containing a second items is includable as an item within the first logical group containing the first items (see col.7, lines 12-23). But Dorrance does not explicitly teach a set of client. However, Lime teaches a set of client (see col.2, lines 43-51,

and col.23, lines 20-40). It would have been obvious to one of ordinary skill in the art at the time of the invention was made to implement the teachings of Lim into the computer system of Dorrance to have a set of client because it would have provided specific functions that can improve and reduce the performance of object in distributed object system.

14. As to claim 15, Dorrance teaches the invention as claimed, wherein the set of interface operations executable by the data access server engine includes a group remove operation that removes a specified group from the process data access server (Fig.2).
15. As to claim 16, Dorrance teaches the invention as claimed, wherein the set of interface operations executable by the data access server engine includes operations for modifying the contents of the first logical group (see col.7, lines 24-55).
16. As to claim 17, Dorrance teaches the invention as claimed, wherein the set of interface operations executable by the data access server engine includes a write operation to a specified data item accessible by the process data access server (fig.3, server 62).
17. As to claim 18, Dorrance teaches the invention as claimed, wherein the set of interface operations includes a data reference structure search operation that returns a data item reference corresponding to a data item value accessible by the client applications via the process data access server (see col.6, lines 40-54).
18. As to claim 19, Dorrance teaches the invention as claimed, wherein the data item reference is a handle (Fig.3).

19. As to claim 20, Dorrance teaches the invention as claimed, wherein the set of interface operations includes an error code generator that supplies error code text to a requesting client data exchange protocol module (Fig.3).
20. As to claim 21, Dorrance teaches the invention as claimed, wherein the set of interface operations includes a status reporter operation that provides access to a data structure that stores status values for the process data access server (see col.6, lines 55-67).
6. As to claim 22, Dorrance teaches the invention as claimed, including a method for providing, by a data access server, access to process data in a distributed process control environment in accordance with a client application data exchange protocol supported by one of a set of client application data exchange protocol modules installed on the data access server, and wherein the application data exchange protocol modules invoke a set of data access operations executable by a data access server engine of the data access server according to a module-engine interface definition, the method comprising the steps of: receiving, by a first client application data exchange protocol module of the data access server (see col.6, lines 7-13), a first client application data access request according to a first data exchange protocol (see col.6, lines 14-25) (translation protocol); first generating, by the first client application data exchange protocol module, a first data access operation call for the data access server engine conforming to the module-engine interface definition, wherein the first data access operation call corresponds to the first client application data access request; and executing, by the data access server engine, the first data

access operation call (see col.6, lines 25-67). But Dorrance does not explicitly teach a set of client. However, Lime teaches a set of client (see col.2, lines 43-51, and col.23, lines 20-40). It would have been obvious to one of ordinary skill in the art at the time of the invention was made to implement the teachings of Lim into the computer system of Dorrance to have a set of client because it would have provided specific functions that can improve and reduce the performance of object in distributed object system.

21. As to claim 23, Dorrance teaches the invention as claimed, further comprising the steps of: second generating, by the data access server engine, a response to the first data access operation call (see col.6, lines 25-39); and third generating, by the first data exchange protocol module, a response to the first client application data access request, wherein the response to the first client application data access request corresponds to the response to the first data access operation call generated by the data access server engine during the second generating step (see col.6, lines 40-54).
22. As to claim 24, Dorrance teaches the invention as claimed, further comprising the steps of: second receiving, by a second client application data exchange protocol module of the data access server, a second client application data access request according to a second data exchange protocol (Fig.3, converter 65); and second generating, by the second client application data exchange protocol module, a second data access operation call for the data access server engine conforming to the module-engine interface definition, wherein the second data access operation call corresponds to the second client application data access request (see col.6, lines 15-54).

23. As to claim 25, Dorrance teaches the invention as claimed, wherein the first data access operation call is identical to the second data access operation call (see col.6, lines 55-68).
24. As to claim 26, Dorrance teaches the invention as claimed, further comprising the step of: receiving, by the first client application data exchange protocol module, a request to create a logical group that contains a set of data items representing data accessed in the process control environment, and a further request to add a data item to the logical group (see col.6, lines 7-54).
25. As to claim 27, Dorrance teaches the invention as claimed, wherein the first client application data access request comprises a subscription query requesting the data access server to issue a notification in response to detecting a change to a data value associated with the data item within the logical group (see col.5, lines 25-54).
26. As to claim 28, Dorrance teaches the invention as claimed, wherein the executing step comprises forwarding a request for device data to a device protocol interface, and wherein the device protocol interface transmits a corresponding data request to a field device according to a field device-specific request protocol (Fig.3).
27. As to claim 29, Dorrance teaches the invention as claimed, further comprising the steps of: receiving, by the device protocol interface, a response from the field device comprising data corresponding to the data item (col.5, lines 25-55); forwarding, by the device protocol interface to the data access server engine, a response message including a data value for the data item (fig.3).

7. As to claim 30, Dorrance teaches the invention as claimed, wherein at least one of the data exchange protocol (see col. 6, lines 15-25) plug ins comprises a static plug in. However, Lime teaches a set of client (see col.2, lines 43-51, and col.23, lines 20-40). It would have been obvious to one of ordinary skill in the art at the time of the invention was made to implement the teachings of Lim into the computer system of Dorrance to have a set of client because it would have provided specific functions that can improve and reduce the performance of object in distributed object system.
28. As to claim 31, Dorrance teaches the invention as claimed, wherein ones of the set of client data exchange protocol modules handle data access requests from client applications in accordance with particular client data exchange protocols (fig.3, protocol converter 65).
29. As to claim 32, Dorrance teaches the invention as claimed, wherein the executing step comprises performing an asynchronous data read operation for providing data from an identified data source in response to a client application data request (fig.3).
30. As to claim 33, Dorrance teaches the invention as claimed, wherein the executing step comprises performing a synchronous read operation that, in accordance with a timer duration expiration event, updates identified process data values via the device protocol interface (see col.6, lines 7-54).
31. As to claim 34, Dorrance teaches the invention as claimed, wherein the synchronous read operation discards an updated process data value for a data item that is determined to be unchanged from a current stored value for the data item, thereby

avoiding transmissions of unchanged data values between the process data access server and requesting client applications (see col.6, lines 15-40).

8. As to claim 35, Dorrance teaches the invention as claimed, wherein the first data access operation call comprises a group creation operation that creates a first group containing a data items (fig.3). But Dorrance does not explicitly teach a set of client. However, Lime teaches a set of client (see col.2, lines 43-51, and col.23, lines 20-40). It would have been obvious to one of ordinary skill in the art at the time of the invention was made to implement the teachings of Lim into the computer system of Dorrance to have a set of client because it would have provided specific functions that can improve and reduce the performance of object in distributed object system.
9. As to claim 36, Dorrance teaches the invention as claimed, further comprising executing, by the data access server engine, a second data access operation call that adds a second logical group containing a second items as a group item within the first group (see col.6, lines 7-39). But Dorrance does not explicitly teach a set of client. However, Lime teaches a set of client (see col.2, lines 43-51, and col.23, lines 20-40). It would have been obvious to one of ordinary skill in the art at the time of the invention was made to implement the teachings of Lim into the computer system of Dorrance to have a set of client because it would have provided specific functions that can improve and reduce the performance of object in distributed object system.
32. As to claim 37, Dorrance teaches the invention as claimed, further comprising executing, by the data access server engine, a second data access operation call that removes a specified group from the data access server (fig.3, server 62).

33. As to claim 38, Dorrance teaches the invention as claimed, further comprising executing, by the data access server engine, a second data access operation call to modify contents of the first logical group (Fig.3, server 62).
34. As to claim 39, Dorrance teaches the invention as claimed, wherein the first data access operation call comprises a write operation to a specified data item accessible by the data access server (fig.3, server 62)
35. As to claim 40, Dorrance teaches the invention as claimed, wherein the first data access operation call comprises a data reference structure search operation that returns a data item reference corresponding to a data item value accessible by the client applications via the process data access server (fig.3, server 62).
36. As to claim 41, Dorrance teaches the invention as claimed, wherein the data item reference is a handle (fig.3).
37. As to claim 42, Dorrance teaches the invention as claimed, wherein the first data access operation call comprises an error code generator operation that supplies error code text to the requesting client data exchange protocol module (see col.6, lines 15-54).
38. As to claim 43, Dorrance teaches the invention as claimed, wherein the first data access operation call comprises a status reporter operation that provides access to a data structure that stores status values for the data access server. (see col.6, lines 55-67).
10. As to claim 44, Dorrance teaches the invention as claimed, including a method for activating a data access server through a start-up process that builds the data access

server from previously installed program files including at least an executable file incorporating a data access server engine and a separate and distinct file containing one or more of a set of client application data exchange protocol modules installed on the data access server and wherein the application data exchange protocol modules invoke a set of data access operations executable by the data access server engine of the data access server according to a module-engine interface definition, the method comprising the steps of: starting up an executable corresponding to the data access server and including the data access server engine (see fig.3, server 62); loading client application data exchange protocol modules thereby creating program links between at least one of the protocol modules and the data access server executable (see col.6, lines 6-67); and instantiating a data access server object corresponding to a connection between the data access server and a requesting client application (see col.7, lines 24-67). But Dorrance does not explicitly teach a set of client. However, Lime teaches a set of client (see col.2, lines 43-51, and col.23, lines 20-40). It would have been obvious to one of ordinary skill in the art at the time of the invention was made to implement the teachings of Lim into the computer system of Dorrance to have a set of client because it would have provided specific functions that can improve and reduce the performance of object in distributed object system.

39. As to claim 45, Dorrance teaches the invention as claimed, wherein the set of client data exchange protocol modules comprise plug ins (see fig.3).
11. As to claim 46, Dorrance does not teach a set of client at least one of the data exchange protocol plug ins comprises a dynamic plug in. However, Lime teaches a

set of client (see col.2, lines 43-51, and col.23, lines 20-40). It would have been obvious to one of ordinary skill in the art at the time of the invention was made to implement the teachings of Lim into the computer system of Dorrance to have a set of client because it would have provided specific functions that can improve and reduce the performance of object in distributed object system.

12. As to claim 47, Dorrance does not teach the invention as claimed, wherein at least one of the data exchange protocol (see col. 6, lines 15-25) plug ins comprises a static plug in. However, Lime teaches a set of client (see col.2, lines 43-51, and col.23, lines 20-40). It would have been obvious to one of ordinary skill in the art at the time of the invention was made to implement the teachings of Lim into the computer system of Dorrance to have a set of client because it would have provided specific functions that can improve and reduce the performance of object in distributed object system.
40. As to claim 48, Dorrance teaches the invention as claimed, wherein the set of protocol conversion modules comprise both static and dynamic plug ins (see Fig.3, Protocol converter 65).
13. As to claim 49, Dorrance teaches the invention as claimed, wherein ones of the data exchange protocol modules handle data access requests from client applications in accordance with particular client data exchange protocols (see col.6, lines 15-39). But Dorrance does not explicitly teach a set of client. However, Lime teaches a set of client (see col.2, lines 43-51, and col.23, lines 20-40). It would have been obvious to one of ordinary skill in the art at the time of the invention was made to implement the

teachings of Lim into the computer system of Dorrance to have a set of client because it would have provided specific functions that can improve and reduce the performance of object in distributed object system.

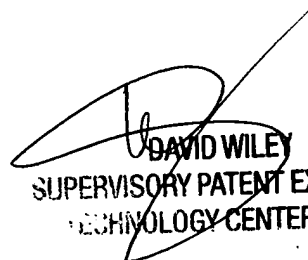
41. As to claim 50, Dorrance teaches the invention as claimed, wherein the set of operations of the data access server engine includes at least one data access operation callable by at least two distinct ones of the set of client data exchange protocol modules that incorporate distinct data exchange protocols (see col.6, lines 3-55).

Conclusion

42. Any inquiries concerning this communication or earlier communications from the examiner should be directed to **Tammy T. Nguyen** who may be reached via telephone at **(571) 272-3929**. The examiner can normally be reached Monday through Friday between 8:00 a.m. and 5:00 p.m. eastern standard time.

If you need to send the Examiner, a facsimile transmission regarding this instant application, please send it to **(703) 872-9306**. If attempts to reach the examiner by telephone are unsuccessful, the Examiner's Supervisor, David Wiley, may be reached at **(571) 272-3923**.

TTN
October 28, 2005


DAVID WILEY
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100